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EXAMINER

JONES III, CLYDE H

ART UNIT	PAPER NUMBER
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2611

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Please find below and/or attached an Office communication concerning this application or proceeding.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-4, 8, 13, 18 and 19 have been considered but are moot in view of the new ground(s) of rejection.

In response to applicant's arguments on pages 10-13 of the 9/13/2005 amendment, the newly added limitations are met by the Bruette and Childlovskii references as described below.

Claim Objections

2. Claim 21 is objected to because of the following informalities: starting on line 1 "claim 20" should be changed to –claim 1–. Appropriate correction is required.

3. Claim 4 is objected to because in the Remarks 2nd paragraph, lines 1-2, Applicant discloses claim 4 is presented for reconsideration and claim 4 is cancelled. Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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5. Claims 1, 2, 3, 4, 8, 13, 18, 19, 21, 23, 24, 25, 27, 28, 29, 30, 31, 34, 35, 36, 37, and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bruette (6,708,336 B1) in view of Chidlovskii (6,347,314).

Regarding claim 1 Bruette discloses receiving at the management system (IRD 10 – fig. 1) signatures (Table 1 – col. 5, lines 20-30 & fig. 2) for the interactive broadcast data text descriptions (service provider search data – fig. 1), each of the signatures created using a first function adapted to convert the interactive broadcast data into the signatures and storing the signatures at the management system in ROM 20/RAM 22 (col. 5, lines 32-35 & 40-46; in which the first function converts service provider search data/interactive broadcast data text descriptions from alphanumeric type data into decimal integers for comparison);

inputting from the input device (remote control –fig. 3) to the management system a user-entered text string (user inputs search criteria characters) (col. 5, 64-67);

using a second function that is different from the first function, and that is adapted to converting the user-entered text string into a signature that is stored at the management system, the signature of the user-entered text string have the same format (decimal integer) as the signature converted by the first function for the interactive broadcast data (col. 5, lines 53-55 & table 1, col. 5; in which the second function converts the user input/characters directly to decimal integers by pressing the alpha key 28 –fig. 3 first and then the input is received by processor 18/RAM 22, which is different

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from the first function in that the first function initially receives alpha-numeric/textual data which is converted later into decimal integers according to the table 1 algorithm);

retrieving and comparing the signatures of the interactive broadcast data text descriptions to the signature of the user-entered text string (col. 6, lines 3-5); and

based on the comparison, the management system identifying one and only one item of interactive broadcast data that matches the input text string, otherwise the management system identifying no match (col. 6, lines 41-58; in which the system identifies (returns) only one match to the user search criteria, otherwise it selects one logical match, e.g., closest/next highest channel, etc., or it identifies no match and allows the user to identify the selected/returned match).

Bruette fails to disclose the first function converting the search data into unique binary signatures and unique binary signatures having a fixed number of bytes and further fails to disclose the second function converting the user-entered search criteria into a unique binary signature and having the same number of fixed bytes as the unique binary signature converted by the first function.

In an analogous art (the art being data retrieval via computerized conversion of records and computerized conversion of user queries to the records to facilitate fast/efficient output of matching results; Chidlovskii - col. 3, lines 12-22, col. 17, lines 45-46, col. 2, lines 13-41; Bruette – col. 7, lines 40-53), Chidlovskii discloses the first function converting the search data (region formulas/terms) into unique binary signatures (region signatures/signature files) and unique binary signatures having a fixed number of bytes (fig. 2A; col. 6, lines 1-9; in which region signatures are created

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from signatures representing a (unique/distinct) signature of a term; col. 5, lines 9-11) and further discloses the second function converting the user-entered search criteria (query term/conjunction of terms) into a unique binary signature (query signature/signature file) and having the same number of fixed bytes as the unique binary signature converted by the first function (fig. 2B; col. 6, lines 1-7; col. 2, lines 47-49; in which query signatures are created from signatures representing a (unique/distinct) signature of a term; col. 5, lines 9-11& col. 7, lines 25-30), for the advantage of for the advantage of simple and efficient query evaluation and comparison that enables the avoidance of most tuple (text description record) duplications (i.e., false drops/positives or regions that "match" but are incorrect) and decreases memory space requirements (col. 3, lines 24-29).

Chidlovskii converts text descriptions (regions, fig. 2A) and user-entered text (queries, fig. 2B) into binary signatures (col. 6, lines 5-7) and compares them in binary signature form (col. 6, lines 30-32), for the advantage of simple and efficient query evaluation and comparison that enables the avoidance of most tuple (text description record) duplications and decreases memory space requirements (col. 3, lines 24-29).

It would be obvious to one of ordinary skill in the art, at the time the invention was made, to modify Bruette's system to include the limitations the first function converting the search data into unique binary signatures and unique binary signatures having a fixed number of bytes and to include the further limitation the second function converting the user-entered search criteria into a unique binary signature and having the same number of fixed bytes as the unique binary signature converted by the first function as

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taught by Chidlovskii, for the advantages of avoidance of most tuple (text description record) duplications and further decreasing memory space requirements (Chidlovskii - col. 3, lines 24-29).

Regarding claim 2, Bruette in view of Chidlovskii further teach the limitation: the binary signatures being converted from interactive broadcast data text descriptions using a first set of specified rules, which cause the interactive broadcast data text descriptions to differ from an original version prior to conversion into the binary signatures (col. 5, line 63 – col. 6, line 10; in which there is an inherent set of rules to perform the generation of a text description/region, e.g. query cache, into a conjunctive region formula, e.g. "query \wedge cache" (a different version), prior to converting the formula terms into term (binary) signatures and ultimately into a region (binary) signature; fig. 2A).

Considering claims 3 and 4, Bruette in view of Chidlovskii further teaches the limitation: converting the user-entered text string into a binary signature using a second set of specified rules, which causes the user-entered text string to differ from an original version prior to conversion into the binary signatures, in which the first set of rules is equivalent/same to the second set of rules (col. 5, line 63 – col. 6, line 10; in which there is an inherent set of rules to perform the generation of a user-entered text string/query, e.g. query cache, into a conjunctive query formula, e.g. "query \wedge cache" (a different version), prior to converting the formula terms into term (binary) signatures and

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ultimately into a query (binary) signature; fig. 2B; in which item 3 shows the second set of rules (for queries) is the same as the first set of rules (for regions/text descriptions).

Regarding claims 8 and 13, Bruette teaches receiving and converting electronic program guide text descriptions (program guide – Bruette – col. 3, lines 29-33) and comparing a converted user-entered text string to the EPG text descriptions as discussed above and Chidlovskii teaches receiving and converting description/regions and queries/user text input strings into binary signatures (Chidlovskii – col. 5, lines 1-10 & col. 6, lines 25-31) and as discussed above. Bruette in view of Chidlovskii obviate the limitations receiving binary signatures of electronic program guide text descriptions and comparing the binary signatures of electronic program guide text descriptions to the binary signature of the user-entered text string for the same advantages as discussed above.

In regards to claim 18 and 19, Bruette in view of Chidlovskii obviate the limitations a set top box associated with a television receiving binary signatures of the interactive broadcast data text descriptions and a set top box associated with a television receiving a user-entered text string from an input device (IRD/STB 10 fig. 1 – Bruette - col. 4, lines 50-52 & 39-41 and fig. 3; col. 5, 64-67).

Regarding claim 21 Bruette in view of Chidlovskii obviate the limitation storing the binary signatures of the interactive broadcast data text descriptions (search data) on

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one or more physical storage media (RAM 22/ROM 20) (Bruette -col. 5, lines 14-15, col. 4, lines 65-67).

Regarding claims 23, 24, 25, and 27, Bruette in view of Chidlovskii obviate the limitations "receiving additional text, which is associated with one or more interactive broadcast descriptions", "receiving additional text, which is associated with one or more electronic program guide text descriptions", "receiving additional text, which is associated with one or more interactive broadcast data text descriptions, if the user-entered text string is included in any of the interactive broadcast data text descriptions", "determining based on the comparison, if the user-entered text string is included in any electronic program guide text descriptions" (Bruette - col. 3, lines 25-47 & col. 6, lines 6-23; Chidlovskii – col. 7, lines 62-65).

Considering claims 28, 29, and 30, they are obviated by Bruette in view of Chidlovskii as analyzed in claims 1, 8 & 18, and 19, respectively and further in regards to the further limitations, "a computer-readable medium carrying computer-readable instructions, that when executed at the processor of the management system, cause the management system to perform the following" and "wherein the computer-readable medium is one or more physical storage media" which are obviated by the teachings of Bruette in view of Chidlovskii (Bruette – processor 18, ROM 20, RAM 22 – fig. 1; col. 4, lines 44-49, and line 63 - col. 6, line 10; Chidlovskii – col. 3, lines 12-23 & col. 4, lines 15-32).

Considering claim 31, it corresponds to the method of claim 1 in which Bruette in view of Chidlovskii disclose all the limitations of claim 1, however the first embodiment of Bruette fails to disclose the further limitation converted immediately before they are loaded into RAM at the management system such that the interactive broadcast data text descriptions are converted to unique electronic program guide signatures as they pass from electronic program guide data to RAM.

However, Bruette discloses an embodiment in which the service provider search data/EPG text description is converted by processor 18 as it is received (immediately) before it is loaded into RAM 22 at the IRD 10 (management system) such that the search data is converted to signatures as it passes from unconverted EPG data to converted EPG data in RAM 22 (col. 7, lines 20-26) for the advantage of fast searching and saving of space in RAM (col. 7, lines 43-53).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system to include the further limitation converted immediately before they are loaded into RAM at the management system such that the interactive broadcast data text descriptions are converted to unique electronic program guide signatures as they pass from electronic program guide data to RAM as taught by Bruette for the advantages of fast searching and saving of space in RAM (col. 7, lines 43-53).

Regarding claim 34, it corresponds to the method of claim 1. Thus, it is analyzed and rejected as discussed in claim 1.

Regarding claims 35 and 36, they correspond to the method of claim 1 and the further limitations the first function is a hash function that produces a unique hash value for the unique binary signatures for the interactive broadcast data text descriptions and the second function is a hash function that produces a unique hash value for the unique binary signatures for the user entered-text string are also obviated by Bruette in view of Chidlovskii (Chidlovskii – col. 6, lines 25-31).

Regarding claim 37, it corresponds to the method of claim 1 and further Bruette in view of Chidlovskii obviate the limitation the management system identifies the one and only item of interactive broadcast data that matches the user entered-text string, and wherein full text descriptions corresponding to the interactive broadcast data are displayed at the management system (Bruette - col. 3, lines 25-47 & col. 6, lines 6-23; in which Bruette discloses program identifying information such as an EPG guide including various service provider search data such as descriptions, performers, keywords, etc., (“full text descriptions”, i.e., not converted text) can be displayed).

Regarding claim 38, Bruette discloses a plurality of user entered text strings are input into the management system (col. 6, lines 35-40) and that management system identifies a plurality of one and only one item of interactive broadcast data that matches

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each of the user entered-text strings (reads on the system identifying the match for two search strings, e.g., a movie title search and actor's name search) and Bruette also discloses the displaying of program identifying information including an EPG which includes service provider search data such as program title, list of performers (actor's names), a description, etc., (reads on displaying of full text descriptions corresponding to matching interactive broadcast data) but does not specifically disclose each of the corresponding text descriptions are displayed simultaneously. However, Applicant's claims do not limit the displaying of each of the corresponding text descriptions to such an interpretation. Therefore, the Examiner broadly interprets Bruette's displaying of program identifying information including an EPG which includes search data such as program title and list of actors to encompass Applicant's "all of the full text descriptions corresponding to each of the matching interactive broadcast data are simultaneously displayed at the management system". Accordingly, it would have been obvious at the time of Applicant's invention to one of ordinary skill in the art to modify the suggested teaching of Bruette to encompass all of the full text descriptions corresponding to each of the matching interactive broadcast data are simultaneously displayed at the management system in order to provide more detailed search results and EPG data, thereby facilitating a more efficient search.

[Note: In the alternative, the examiner takes Official Notice that, at the time of the Applicant's invention, it was notoriously known in the art to provide all of the full text descriptions corresponding to each of the matching interactive broadcast data are

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simultaneously displayed at the management system (as evidenced by Maze et al., US 6,216,264 B1 fig. 2 & 3).]

6. Claims 22 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bruette (6,708,336 B1) in view of Chidlovskii (6,347,314) and further in view of Kessels, et al. (4,598,385).

Considering claims 22 and 26 Bruette in view of Chidlovskii teach the bit-wise comparison of interactive broadcast data text description signatures to user-entered text signatures (as discussed above and in Chidlovskii – col. 6, lines 58-67 & lines 30-32).

Bruette in view of Chidlovskii fail to specifically disclose the results of a logical OR operation performed on any/each of the binary signatures of the one or more interactive broadcast data text descriptions and the binary signature of the user-entered text string is identical.

In an analogous art, Kessels teaches a method (fig. 4 - col. 6, lines 9-11) that determines bit-wise equivalence between a byte field/reference (such as text descriptions) in RAM 140, 142 and a received byte field/data record 114 (such as a user text input/query). Kessels' system compares, via comparator 156, the bytes of the reference/the text description (cached in RAM 142) to the result of a logical OR (implemented by comparator 152) performed on the reference/the text description (which is mirrored in RAM 140) and the received data record 114/query (col. 6, lines 43-

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47 & col. 6, lines 25-43; in which the EXCLUSIVE-OR/XOR function inherently does a logical OR operation to perform as disclosed).

It would have been obvious by one skilled in the art at the time the invention was made, to modify the method of Bruette in view of Chidlovskii to further include the results of a logical OR operation performed on any/each of the binary signatures of the one or more interactive broadcast data text descriptions and the binary signature of the user-entered text string is identical as taught by Kessels for the advantage providing a simple, efficient and easily implemented way to determine bit-wise correspondence/relationships between signatures.

8. Claims 32 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bruette (6,708,336 B1) in view of Chidlovskii (6,347,314) and further in view of Light (6,480,835 B1).

Considering claims 32 and 33, it corresponds to the method of claim 1, however Bruette in view of Chidlovskii fail to disclose the limitation are converted before transmission to the management system.

In an analogous art (the information retrieval art) Light discloses metadata 10 – fig. 7 (a compact representation of the document set which allows searching on the document set using a filtering criterion/“user entered query” reads on signatures) are created (converted) from documents before being transmitted to the client processor 300 (management system) (col. 12, lines 9-13 & 20-21) for the purpose of reducing the

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size of the metadata and focusing the metadata based on user requirements (col. 4, lines 56-65).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Bruette in view of Chidlovskii to include the further limitation are converted before transmission to the management system as taught by Light for the advantages of further reducing the size of the metadata (stored signatures) and focusing the metadata based on user requirements (Light - col. 4, lines 56-65).

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

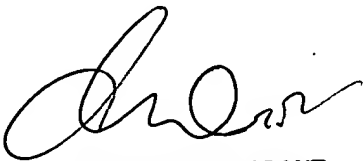
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Clyde H. Jones III whose telephone number is 571-272-5946. The examiner can normally be reached on 9-5:30 p.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Grant can be reached on 571-272-7294. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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CJ



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